



MATRIX 11 INCH
HARD COPY OUTPUT DEVICES

APRIL 1971



PRINTER

PLOTTER

COMBINATION
PRINTER/PLOTTER

GENERAL DESCRIPTION

All Matrix models use an advanced electrostatic writing technique and operate with no moving parts except in the paper transport. Simplicity in design and increased operating reliability over conventional impact printers and pen plotting systems are advantages in operation. Low initial equipment cost (including interface equipment), greatly reduced maintenance costs and system down-time are added benefits to Matrix users.

The Matrix products are designed for use with computer systems of all sizes, and are particularly suited for small and medium size systems where the cost of peripherals is a major consideration. Matrix is also used in CRT terminal applications where hard copy output is required and in high speed communications applications, up to 9600 BPS, for remote batch processing.

Matrix printers accept asynchronous ASCII data in serial or parallel. The ASCII input is decoded and converted to characters by means of a Read-Only-Memory (ROM), included in the standard configuration. Matrix plotters accept software generated data in eight bit bytes for raster scan plotting of graphic information. Combination printer/plotters accept both printing and plotting input data.

Interfacing Matrix Printers and Plotters

A basic interface description for Matrix products is available on request. Matrix is easy to interface because it has:

- * Standard TTL (Series 74) Levels
- * Standard TTY (Teletype) Levels
- * Asynchronous Input
- * Serial and Parallel Input
- * High Speed Parallel Data Transfer Rate (800K BPS)
- * Selectable Serial Data Rates (110 to 9600 BPS)

Matrix 1300 Printer

Matrix 1300 is a 132 column non-impact printer. Very high contrast, perfectly formed 7 x 9 dot matrix characters are printed at speeds up to 480 lines per minute, on 11 inch wide paper. The standard configuration includes a 132 character one line buffer. An optional two line buffer is available for those applications which require it.

SPECIFICATIONS

Columns	132
Character Spacing	12.5/inch
Line Spacing	6.6/inch
Font	7 x 9 dot matrix
Speed	Up to 480 LPM (1056 characters per second)
Input Code	ASCII - Serial or Parallel
Character Set	64
Data Input Rates	
Serial	110, 150, 300, 600, 1200, 2400, 4800, 9600 BPS
Parallel	100K, 8 bit bytes/second maximum

Matrix 1100 Plotter

Matrix Model 1100 is a raster scan plotter that operates at 1.2 inches per second paper speed. Plotting is done on 10.24 inches of the 11 inch wide paper, with 1024 writing nibs or 100 nibs per inch. Input to Model 1100 is asynchronous parallel 8 bit bytes, and 128 bytes comprise one scan. An incremental paper drive motor provides accuracy in plotting, and an 11 x 8-1/2" graph, regardless of complexity, can be plotted in approximately 7 seconds, with excellent resolution.

SPECIFICATIONS

Plotting Width	10.24 inches
Total Writing Nibs	1024
Nib Spacing	10.0 mils center to center (100/inch)
Paper Drive Increment	10.0 mils
Input	Parallel 8 bit bytes (128 bytes comprise one scan)
Input Data Rate	Asynchronous up to 120 scans/second (100K bytes/second maximum)
Plotting Speed	Up to 1.2 inches/second

Matrix 1100A Printer/Plotter

Matrix 1100A is a versatile hard copy output device that combines the features of a 480 LPM printer and a 1.2 inch per second plotter.

Matrix 1100A operates in two separate modes, one for printing and one for plotting. In the print mode, ASCII input is decoded and converted to characters by means of a solid state read-only-memory and printed at rates up to 1056 characters per second.

In the plot mode, the Matrix 1100A accepts 128 eight bit bytes per scan to permit graphical plotting from software generated data. Each bit relates to one nib on the writing head. The input is asynchronous with a maximum data rate of 120 scans per second. Eleven inch wide paper is driven incrementally, in one direction only, in synchronism with the input up to 1.2 inches per second.

Matrix 1100A eliminates the necessity for using separate printers and plotters, since it performs the functions of both. It can be operated on-line or off-line for alphanumeric printing and plotting. In addition, it can combine the two on a single piece of paper.

SPECIFICATIONS

<u>Printing</u>		<u>Plotting</u>	
Columns	132	Plotting Width	10.24 inches
Character Spacing	12.5/inch	Total Writing Nibs	1024
Line Spacing	6.6/inch	Nib Spacing	10.0 mils center to center (100/inch)
Font	7x9 dot matrix	Paper Drive Increment	10.0 mils
Speed	Up to 480 LPM	Input	Parallel 8 bit bytes (128 bytes comprise 1 scan)
Input Code	ASCII - Serial or Parallel	Input Data Rate	Asynchronous up to 120 scans/second (100K bytes per second maximum)
Character Set	64	Plotting Speed	Up to 1.2 inches/second

Optional Software For Plotting

VERSAPLOT is a new concept in plotting software which provides the user with a versatile, flexible system with which to build applications software packages for plotting of all types. VERSAPLOT is written in Fortran and has been optimized from several standpoints:

- * to make the optimum use of the newest version of plotting equipment, Matrix plotters and printer/plotters
- * to provide flexibility for machines with varying characteristics of core size, data storage and CPU speeds
- * to provide the utmost in features which speed the production of the application software, while providing maximum flexibility for the production of all types of drawings, charts and diagrams.

Information on VERSAPLOT is available on request.

The following general specifications apply to Matrix 11 inch printers, plotters and combination printer/plotters. Individual product specifications are shown separately for each model.

GENERAL SPECIFICATIONS

Writing Method	Electrostatic
Paper Drive	Incremental
Paper Drive Increment	10.0 mils
Speed	Up to 480 LPM & 1.2 inches/second
Paper Advance Speed	1.2 inches/second
Manual Controls	Power On-Off, Paper Advance, Contrast, Reset (Form Feed with Fan-Fold Paper Option)
Visual Indicators	Power On-Off, Low Paper
Power Required	115 VAC \pm 10%, 60 HZ \pm 2 HZ, or 230 VAC \pm 10%, 50 HZ \pm 2 HZ, 600 Watts Maximum
Size	19 in. W x 18 in. D x 38 in. H
Net Weight	160 lbs.
Paper Width	11 inches
Paper Length	500 foot roll or optional 1000 sheet continuous form Fan-Fold 11 x 8-1/2 inches
Toner Supply	2 gallons
Concentrate Supply	8 ounces
Environment	Temperature 32° to 105° F Humidity 10% to 95% R.H.

Controllers for Operating Matrix

Optional Versatec standard controllers are available for operating Matrix with more than twenty computers. Controllers include printed circuit cards, a 10 foot interconnect cable, software drivers, object tapes, listings and diagnostic tape. Additional information is available on request.

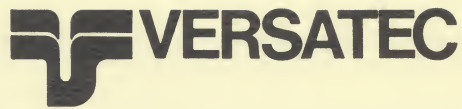
Accessories

All Matrix Models operate with roll paper, 500 feet in length, or with 1000 sheet continuous form fan-fold paper.

Versatec offers an optional Paperwinder Accessory that winds 11 inch roll paper. A low-torque gearmotor provides a constant light pull on the paper for efficient operation. An optional fan-fold paper accessory permits the use of electrographic paper in standard sheet size, 11" x 8-1/2". Optical mark sensing of a black mark is used to determine top-of-page rather than pin-feed control as used in conventional printers.

Additional Information

For additional information, prices and delivery schedules, please contact the Versatec Representative in your area or the Versatec Marketing Department in Cupertino, California.



PRICE LIST

MARCH 1971

● MATRIX PRINTERS & PLOTTERS - See Individual Data Sheets For Specifications

Prices are for Matrix Models operating with roll paper.
For fan-fold paper operation, see ACCESSORIES section.

<u>8-1/2" Paper Width, 80 Columns</u>		<u>11" Paper Width, 132 Columns</u>	
<u>Model</u>	<u>Unit Price</u>	<u>Model</u>	<u>Unit Price</u>
300 Printer	\$ 5,500	1300 Printer	\$ 6,700
600 Printer	6,100	1100 Plotter	7,200
100 Plotter	5,900	1100A Printer/Plotter	8,800
200 Plotter	6,500		
100A Printer/Plotter	7,300		
200A Printer/Plotter	7,900		

● MULTIPLUS SYSTEMS - See Individual Data Sheet For General Specifications. System prices vary with configuration, and will be provided on request.

● CONTROLLERS FOR OPERATING MATRIX

Versatec standard controllers are available for the computers shown below. Controllers include printed circuit cards, 10 foot interconnect cable, software drivers, object tapes, listings and diagnostic tape. See Individual Data Sheets For Specifications.

<u>Controller Model</u>	<u>Computer</u>	<u>Unit Price</u>
C-21X	HP-21XX Series	\$ 1,400
C-PDP8	DEC-PDP-8	1,400
C-PDP12	DEC-PDP-12	1,400
C-PDP15	DEC-PDP-15	1,750
C-909	GRI-909	750
C-NSN	Data General Nova Series	1,400
C-520	Varian 520i	1,600
C-620	Varian 620 Series	1,600
C-1130	IBM 1130	3,000
C-1800	IBM 1800	3,000
C-SIG	XDS Sigma Series	3,500

● ACCESSORIES AND OPTIONS - See Individual Data Sheets For Specifications

8-1/2" Products

<u>Model</u>		<u>Unit Price</u>
A-10	Additional 80 character (1-Line) buffer for Matrix 300, 600 and 100A	\$ 400
A-11	Simultaneous Print/Plot (SPP) mode operation, includes additional one line buffer, harness and logic circuitry for Matrix 100A and 200A only	650
A-20	Fan-Fold Paper Accessory, applicable to 8-1/2" Matrix Models, includes supply and receiver trays, paper guide hardware, top-of-page optical mark sensing and control electronics. Permits paper advance at 1.656 inches/second	495
A-30	Paperwinder Accessory that winds 8-1/2" roll paper as it feeds from the printer. A low-torque gearmotor provides a constant light pull on the paper for efficient operation	115

11" Products

A-110	Additional 132 character (1-Line) buffer for Models 1300 and 1100A	700
A-120	Fan-Fold Paper Accessory, applicable to 11" Matrix Models, includes supply and receiver trays, paper guide hardware, top-of-page optical mark sensing and control electronics. Permits paper advance at 1.2 inches/second	495
A-130	Paperwinder Accessory that winds 11" roll paper as it feeds from the printer. A low-torque gearmotor provides a constant light pull on the paper for efficient operation	135

● LEASING VERSATEC EQUIPMENT

Versatec equipment is available on a full pay-out lease program through Chandler Leasing Corporation. Listed below is a rate schedule in effect at time of printing. Rates are subject to change without notice.

<u>Equipment Cost - \$1,500 to \$9,999</u>		<u>Equipment Cost - \$10,000 to \$99,999</u>	
<u>Monthly Rate</u>	<u>Base Term of Lease</u>	<u>Monthly Rate</u>	<u>Base Term of Lease</u>
8.9%	13 Months	8.79%	13 Months
4.7%	26 Months	4.62%	26 Months
3.3%	40 Months	3.23%	40 Months
2.6%	53 Months	2.54%	53 Months
2.2%	66 Months	2.13%	66 Months

Monthly rates are computed as a percentage of total cost of equipment leased (including Sales Tax, where applicable). Contact Versatec for complete leasing information.

● SUPPLIES

Toner Supplies

One six (6) quart bottle of Type D Toner Pre-Mix, and one eight (8) ounce bottle of Type C Toner Concentrate is sufficient for toning from 10 to 15 thousand feet of paper, depending on amount of data being printed and on darkness of printout desired. Clear Dispersant is used for diluting Toner and for general cleaning purposes.

<u>Type B Clear Dispersant</u> <u>4 Quart Bottle</u>		<u>Type C Toner Concentrate</u> <u>8 Ounce Bottle</u>		<u>Type D Toner Pre-Mix</u> <u>6 Quart Bottle</u>	
1 - 24	\$5.00	1 - 24	\$6.00	1 - 24	\$20.00
25 - 49	4.00	25 - 49	5.50	25 - 49	17.00
50 - 99	3.00	50 - 99	5.00	50 - 99	15.00

Paper Supplies

Electrographic Paper, 500 Foot Roll, 2 Rolls (1000 feet) Per Carton

<u>Quantity</u> <u>Carton</u>	<u>Type 45R-8</u> <u>8-1/2 Inches Wide</u>	<u>Type 45R-11</u> <u>11 Inches Wide</u>
	<u>Price/Carton</u>	<u>Price/Carton</u>
1 - 2	\$30.00	\$39.00
3 - 5	26.00	34.00
6 - 11	22.00	29.00
12 - 23	20.00	26.00
24 - 47	18.00	24.00
48 - 99	16.50	21.50

Electrographic Paper, 1000 Sheet Continuous Form, Fan-Fold, 1000 Sheets Per Carton

<u>Quantity</u> <u>Carton</u>	<u>Type 45F-8</u> <u>8-1/2 x 11 Inch Sheets</u>	<u>Type 45F-11</u> <u>11 x 8-1/2 Inch Sheets</u>
	<u>Price/Carton</u>	<u>Price/Carton</u>
1 - 2	\$33.00	\$33.00
3 - 5	29.00	29.00
6 - 11	25.00	25.00
12 - 23	22.00	22.00
24 - 47	20.00	20.00
48 - 99	18.00	18.00

Large quantity shipments of paper may be packaged to different standards. Consult the factory for information on specific orders.

● SPARE PARTS

The following Spare Parts Kits are available for Matrix products

<u>Spare Parts For 8-1/2" Products</u>		<u>Spare Parts For 11" Products</u>	
<u>Model</u>	<u>Price</u>	<u>Model</u>	<u>Price</u>
SP-L8 (Services 1-3 Machines)	\$250	SP-L11 (Services 1-3 Machines)	\$325
SP-D8 (Services 4-12 Machines)	975	SP-D11 (Services 4-12 Machines)	1,050

- VERSATEC SERVICE PROGRAM

Service centers are conveniently located throughout the United States and Canada for servicing Matrix Printers and Plotters. Versatec customers may have service performed on their equipment, as required, on an individual basis, or purchase service on an annual maintenance contract. Information on the Service Program, service center locations and service rates, is available on request.

- SOFTWARE AND INTERFACE EQUIPMENT

Information and prices on special interface equipment, controllers, and software packages will be provided on request.

- SHIPPING SCHEDULES

Normal shipping schedules on Matrix Printers, Plotters and Controllers are 45-90 days ARO, depending on Model ordered.

Normal shipping schedule for supplies is within forty-eight hours ARO.

- TERMS AND CONDITIONS - MINIMUM ORDER

Prices shown are F.O.B. Versatec Factory, Cupertino, California. Terms are net 30 days. Prices are subject to change without notice. Complete Versatec sales terms and conditions and Warranty Description are available on request. Minimum order is \$25.00.

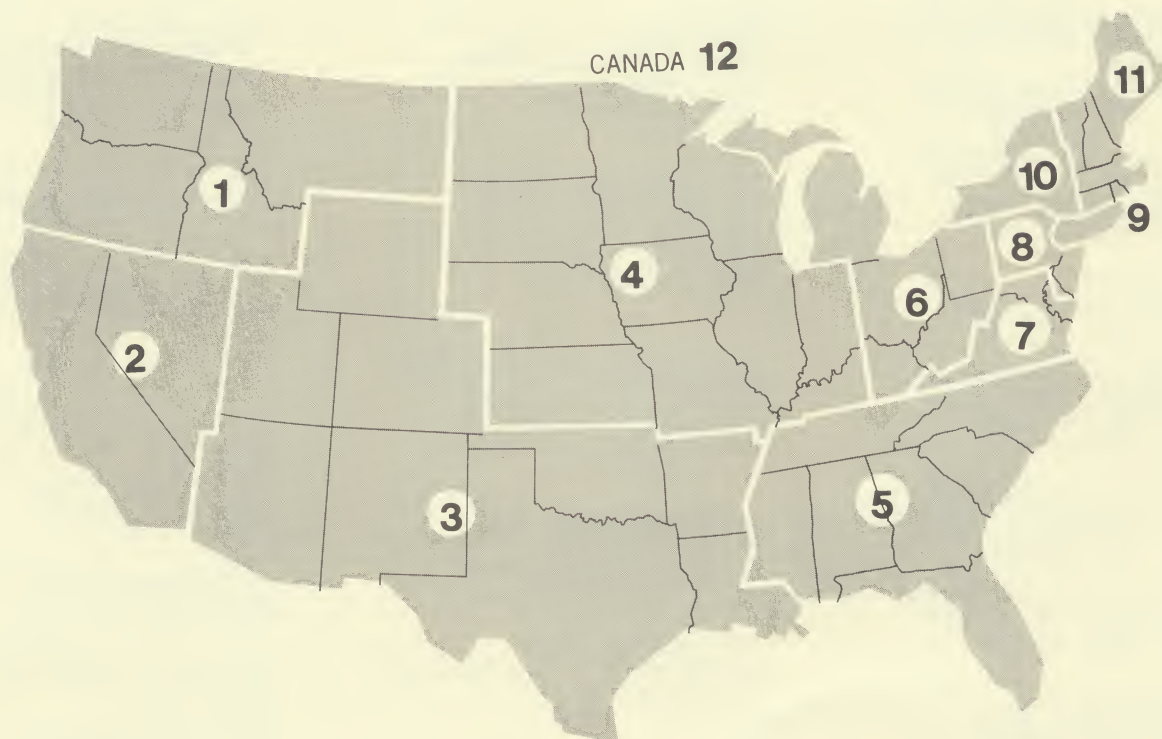
- QUANTITY PRICES

Prices and firm delivery quotations on quantity orders of Versatec products and larger quantity supplies will be provided on request.

- HOW TO ORDER

For additional information, please contact the Versatec Representative in your area, or the Versatec Marketing Department in Cupertino. Address your orders to Versatec, Inc., 10100 Bubb Road, Cupertino, California 95014.

VERSATEC SALES REPRESENTATIVES



LOCAL CALLS PERTAINING TO SALES AND SERVICE SHOULD BE MADE
TO VERSATEC SALES REPRESENTATIVE OFFICE IN YOUR AREA

- | | | |
|--|--|--|
| 1. <u>HAYES TECHNICAL</u>
3611 Terminal Court
Seattle, Washington 98144
Tel: (206) 723-4141 | 3. <u>BARNHILL ASSOCIATES</u>
1170 South Sheridan Blvd.
Denver, Colorado 80226
Tel: (303) 934-5505
TWX: 910-931-2685 | 4. <u>COZZENS & CUDAHY INC.</u>
9501 West Devon Avenue
Rosemont, Illinois 60018
(Chicago)
Tel: (312) 825-1144
TWX: 910-253-1820 |
| 2. <u>INSTRUMENT SPECIALISTS INC.</u>
1109 South Central Avenue
Glendale, California 91204
Tel: (213) 245-9404
TWX: 910-497-2086 | 1410-D Wyoming N.E.
Albuquerque, New Mexico 87112
Tel: (505) 299-7658
TWX: 910-989-1650 | 21 Beachway Drive
Indianapolis, Indiana 46224
Tel: (317) 244-2456 |
| 1909 State Street
San Diego, California 92101
Tel: (714) 232-2017 | 537 East Osborn Road
Suite 4
Phoenix, Arizona 85012
Tel: (602) 263-1250
TWX: 910-951-1595 | 7450 France Avenue South
Minneapolis, Minnesota 55435
Tel: (612) 920-1022 |
| 2359 De La Cruz Blvd.
Santa Clara, California 95050
Tel: (408) 244-1505
TWX: 910-338-0121 | 312 North Central Expressway
Suite 220
Richardson, Texas 75080
(Dallas)
Tel: (214) 231-2573
TWX: 910-867-4711 | 10534 Natural Bridge Road
St. Louis Missouri 63134
Tel: (314) 423-1234
TWX: 314-044-7353 |
| | 3810 Westheimer, Suite 332
Houston, Texas 77027
Tel: (713) 621-0040
TWX: 910-881-2573 | |

5. REYNOLDS & ASSOCIATES INC.
904 Bob Wallace Avenue
Suite 103
Huntsville, Alabama 35801
Tel: (205) 536-1941

175 West Wieuca Road, N.E.
Suite 139
Atlanta, Georgia 30305
Tel: (404) 252-5360

P.O. Box 8877
Orlando, Florida 32806
Tel: (305) 843-6440

822 East Strawbridge Avenue
Melbourne, Florida 32901
Tel: (305) 727-3205
TWX: 510-959-6003

161 South West 75th Avenue
Ft. Lauderdale, Florida 33314
Tel: (305) 581-6611

320 Southwest 75th Terrace
Plantation, Florida 33314
Tel: (305) 581-6611
6. WKM ASSOCIATES INC.
16141 Puritas Avenue
Cleveland, Ohio 44135
Tel: (216) 267-0445
TWX: 810-421-8453

6073 Far Hills Avenue
Dayton, Ohio 45450
Tel: (513) 434-7500
TWX: 810-459-1687

1474 East Outer Drive
Detroit, Michigan 48234
Tel: (313) 892-2500
TWX: 810-243-4110

90 Clairton Blvd.
Pittsburgh, Pennsylvania 15236
Tel: (412) 892-2953
TWX: 710-667-4858
7. MESA INC.
12601 Twinbrook Parkway
Rockville, Maryland 20852
Tel: (301) 881-8430
TWX: 710-828-0474
8. DATA ENGINEERING COMPANY
304 West Johnson Highway
Norristown, Pennsylvania 19401
Tel: (215) 272-1444
TWX: 510-660-0713
9. TECHNICAL MARKETING ASSOCIATES
4 Horizon Road
Fort Lee, New Jersey 07024
Tel: (201) 224-6911
TWX: 710-991-9710
10. OSSMANN INSTRUMENTS INC.
474 Thurston Road
Rochester, New York 14619
Tel: (716) 328-2230

122 East Main Street
Wappingers Falls, New York 12590
(Poughkeepsie)
Tel: (914) 297-7777

1901 Vestal Parkway, East
Vestal, New York 13850
Tel: (607) 785-9947
TWX: 510-252-1987

6666 Old Collamer Road
East Syracuse, New York 13057
Tel: (315) 437-6666
TWX: 710-541-1523
11. J & J ASSOCIATES
12 Cambridge Street
Burlington, Massachusetts 01803
Tel: (617) 272-2606
TWX: 710-324-6356

965 Dixwell Avenue
Hamden, Connecticut 06514
Tel: (203) 624-7800
12. AHEARN & SOPER LIMITED
844 Caledonia Road
Toronto 19, Ontario
Tel: (416) 789-4325
Telex: 02-3757

3300 Cavendish Blvd.
Suite 220
Montreal 28, Quebec
Tel: (514) 482-9750
Telex: 01-26107

1680 Gilmore Avenue
Burnaby 2, B.C.
Tel: (604) 291-0214

280 Albert Street
Suite 1016
Ottawa, Ontario
Tel: (613) 232-4518
Telex: 013-3547